No. 9200184

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

AgriPro Biosciences Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT TY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS F CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'Laredo'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D.C. *this* 29th *day of* April *in the year of our Lord one thousand nine hundred and* ninety-four.

Attest:

Kenneth B Evans

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

APPROVAL EXPIRES 4-30-85

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION	3. VARIETY NAME
~~AgriPro Biosciences Inc.~~ HybriTech US, a Monsanto Company CGM 16 Jun 1998	W87-018	LAREDO

4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code)	5. PHONE (Include area code)	FOR OFFICIAL USE ONLY
6700 Antioch Shawnee Mission, Kansas 66204	913-384-4940 (KS) 303-532-3721 (CO)	PVPO NUMBER 9200184

6. GENUS AND SPECIES NAME	7. FAMILY NAME (Botanical)	FILING DATE / TIME
Triticum aestivum	Gramineae	May 1, 1992 TIME ☐ A.M. ☐ P.M.

8. KIND NAME	9. DATE OF DETERMINATION	FEES RECEIVED
Hard Red Winter Wheat	July, 1989 ~~1) 1987~~ ~~2) 1990~~	AMOUNT FOR FILING: $ 2150.00 DATE: Apr. 30 1992 AMOUNT FOR CERTIFICATE: $ 250.00 DATE: Apr. 6, 1993

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*

Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION	12. DATE OF INCORPORATION
Delaware	February 10, 1989

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

R. E. Heiner
6700 Antioch
Shawnee Mission, KS 66204
913-384-4940

~~OR~~ Mark J. Messmer
HybriTech US
5912 North Meridian
Wichita KS 67204

~~C. Bruns or R.F. Bruns~~
~~P.O. Box 30~~
~~Berthoud, Colorado 80513~~
PHONE *(Include area code)*: 316-755-1707 ~~303-532-3721~~
Fax 316 755 0072
(e mail: MarkJ.Messmer @ Monsanto.Com
[CGM 16 Jun 1998]

14 CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. [XX] Exhibit A. Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
b. [X] Exhibit B. Novelty Statement.
c. [X] Exhibit C. Objective Description of Variety *(Request form from Plant Variety Protection Office.)*
d. [X] Exhibit D. Additional Description of Variety.
e. [X] Exhibit E. Statement of the Basis of Applicant's Ownership. Exhibit F, Quality and Agronomic Data

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)* [X] Yes *(If "Yes," answer items 16 and 17 below)* ☐ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?	17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
[X] Yes ☐ No	[X] Foundation [X] Registered [XX] Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?

☐ Yes *(If "Yes," give date)*
[XX] No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES ?

☐ Yes *(If "Yes," give names of countries and dates)*
[XX] No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT	DATE
R E Heiner	4-13-92
SIGNATURE OF APPLICANT	DATE

FORM WA-470 (7-84) (Edition of 3-84 is obsolete.)

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EXHIBIT A.

ORIGIN AND BREEDING HISTORY OF LAREDO

Laredo is an F3 derived, single plant selection from the cross Colt/Victory. The cross was made in 1982 and the plant selection made at Berthoud, Colorado in 1985. The resulting F4 plant row was tested in preliminary yield trials in 1986. Laredo has since been tested in replicated yield trials over a fairly broad geographic area in the Hard Red Winter Wheat region from 1987 thru 1991. Laredo is entered in selected official 1992 university trials and the 1992 Southern Regional Performance Nursery.

In 1989, 120 head-rows were grown in Berthoud, Colorado. One hundred eight head-rows were selected for harvest and advanced to a two acre breeder seed increase in 1990, which produced 4800 pounds of breeder seed. In 1991, an additional breeder seed increase in Colorado produced 1525 pounds of breeder seed. In 1992, 291,730 pounds of foundation seed was produced in Colorado.

Laredo has been uniform and stable since 1991. Less than 0.5% of the plants were rogued from the breeder seed field in 1990. Approximately 90% of these rogued variant plants were five to ten centimeters taller than Laredo. Up to 1% total variant plants may be encountered in subsequent generations.

EXHIBIT B.

NOVELTY STATEMENT

Laredo is most similar to the hard red winter wheat Victory. However, it can be distinguished by the following morphological characteristics:

- Both Laredo and Victory have acuminate beaks but Laredo's beak is significantly longer, (see statistical data following page).

9200184 (Novelty Supplement)

ANALYSIS OF VARIANCE - LAREDO vs. VICTORY
BEAK LENGTH

TOTAL OBSERVATIONS: 50

	VAR	BEAKLENG
N OF CASES	50	50
MINIMUM	1.000	3.200
MAXIMUM	2.000	15.000
MEAN	1.500	6.974
STANDARD DEV	0.505	3.505

THE FOLLOWING RESULTS ARE FOR:
VAR = Laredo

TOTAL OBSERVATIONS: 25

	VAR	BEAKLENG
N OF CASES	25	25
MINIMUM	1.000	5.200
MAXIMUM	1.000	15.000
MEAN	1.000	9.884
STANDARD DEV	0.000	2.553

THE FOLLOWING RESULTS ARE FOR:
VAR = Victory

TOTAL OBSERVATIONS: 25

	VAR	BEAKLENG
N OF CASES	25	25
MINIMUM	2.000	3.200
MAXIMUM	2.000	7.900
MEAN	2.000	4.064
STANDARD DEV	0.000	0.964

DEP VAR:BEAKLENG N: 50 MULTIPLE R: 0.839 SQUARED MULTIPLE R: 0.703
ADJUSTED SQUARED MULTIPLE R: 0.697 STANDARD ERROR OF ESTIMATE: 1.930

VARIABLE	COEFFICIENT	STD ERROR	STD COEF	TOLERANCE	T	P(2 TAIL)
CONSTANT	15.704	0.863	0.000	.	18.199	0.000
VAR	-5.820	0.546	-0.839	.100E+01	-10.664	0.000

ANALYSIS OF VARIANCE

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F-RATIO	P
REGRESSION	423.405	1	423.405	113.722	0.000
RESIDUAL	178.711	48	3.723		

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BEAK LENGTH LAREDO vs. VICTORY (Novelty Supplement)

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 50 CASES
DEPENDENT VARIABLE IS BEAKLENG
GROUPING VARIABLE IS VAR

GROUP		COUNT	RANK SUM
Laredo	1.000	25	944.000
Victory	2.000	25	331.000

MANN-WHITNEY U TEST STATISTIC = 619.000
PROBABILITY IS 0.000
CHI-SQUARE APPROXIMATION = 35.453 WITH 1 DF

ANOVA TABLE FOR BEAK LENGTH

LAREDO vs. VICTORY

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TOTAL OBSERVATIONS: 50

VAR	BEAKLENG
N OF CASES	50
MINIMUM	3.000
MAXIMUM	15.400
MEAN	6.970
STANDARD DEV	3.515

THE FOLLOWING RESULTS ARE FOR:
VAR = LAREDO

TOTAL OBSERVATIONS: 25

VAR	BEAKLENG
N OF CASES	25
MINIMUM	5.200
MAXIMUM	15.400
MEAN	9.884
STANDARD DEV	2.567

THE FOLLOWING RESULTS ARE FOR:
VAR = VICTORY

TOTAL OBSERVATIONS: 25

VAR	BEAKLENG
N OF CASES	25
MINIMUM	3.000
MAXIMUM	7.900
MEAN	4.056
STANDARD DEV	0.972

DEP VAR:BEAKLENG N: 50 MULTIPLE R: 0.837 SQUARED MULTIPLE R: 0.701
ADJUSTED SQUARED MULTIPLE R: 0.695 STANDARD ERROR OF ESTIMATE: 1.941

VARIABLE	COEFFICIENT	STD ERROR	STD COEF	TOLERANCE	T	P(2 TAIL)
CONSTANT	15.712	0.868	0.000	.	18.104	0.000
VAR	-5.828	0.549	-0.837	.100E+01	-10.618	0.000

ANALYSIS OF VARIANCE

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F-RATIO	P
REGRESSION	424.570	1	424.570	112.733	0.000
RESIDUAL	180.775	48	3.766		

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY

WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
AgriPro Biosciences Inc.

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
6700 Antioch
Shawnee Mission, KS 66204

FOR OFFICIAL USE ONLY
PVPO NUMBER
9200184
VARIETY NAME OR TEMPORARY DESIGNATION
LAREDO

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:
[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:
[2] 1 = SPRING 2 = WINTER 3 = OTHER *(Specify)* _____
[2] 1 = SOFT 2 = HARD 3 = OTHER *(Specify)* _____
[2] 1 = WHITE 2 = RED 3 = OTHER *(Specify)* _____

3. SEASON - NUMBER OF DAYS FROM [redacted] TO:
[2][3][0] FIRST FLOWERING planting
[2][3][6] LAST FLOWERING

4. MATURITY *(50% Flowering)*: **Same as Victory
[---] NO. OF DAYS *EARLIER* THAN .....
[---] NO. OF DAYS *LATER* THAN .....
[---] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

5. PLANT HEIGHT *(From soil level to top of head)*:
[0][7][7] CM. HIGH
[---] CM. TALLER THAN .....
[0][7] CM. SHORTER THAN .....
[--] [7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Victory

6. PLANT COLOR AT BOOTING *(See reverse)*:
[2] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:
[1] 1 = YELLOW 2 = PURPLE

8. STEM:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom: 1 = ABSENT 2 = PRESENT
[2] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[0][5] NO. OF NODES *(Originating from node above ground)*
[2][2] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:
[2] Anthocyanin: 1 = ABSENT 2 = PRESENT
[1] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:
[1] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER *(Specify)*: _____
[2] Flag leaf: 1 = NOT TWISTED 2 = TWISTED
[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
[1][3] MM. LEAF WIDTH *(First leaf below flag leaf)*
[2][2] CM. LEAF LENGTH *(First leaf below flag leaf)*:

FORM GR-470-6 (REVERSE) 'LAREDO' 9200184

11. HEAD:

[3] Density: 1 = LAX 2 = OENSE 3=middense

[1-2] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[1] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[8.4] CM. LENGTH [10] MM. WIDTH

12. GLUMES AT MATURITY:

[2] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.)

[1] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

[4-5] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[2] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[2] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[3] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[2] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[---] Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[6.3] MM. LENGTH [3.2] MM. WIDTH [41] GM. PER 1000 SEEDS

17. SEED CREASE:

[1] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[1] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3=Moderately Susceptible 4=Moderately Resistant

[4] STEM RUST (Races) field races [2] LEAF RUST (Races) field races [0] STRIPE RUST (Races) _____ [0] LOOSE SMUT

[4] POWDERY MILDEW [0] BUNT [0] OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3=Moderately Susceptible 4=Moderately Resistant

[0] SAWFLY [0] APHID (Bydv.) [0] GREEN BUG [0] CEREAL LEAF BEETLE

[0] OTHER (Specify) _____

HESSIAN FLY RACES: [1] GP [0] A [0] B [0] C [0] D [0] E [0] F [0] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Victory	Seed size	Victory
Leaf size	Victory	Seed shape	Victory
Leaf color	Victory	Coleoptile elongation	Victory
Leaf carriage	Victory	Seedling pigmentation	Victory

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.T. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States. Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Wallis, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 29 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

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EXHIBIT D.

ADDITIONAL BOTANICAL DESCRIPTION OF LAREDO

Laredo is a hard red winter wheat bred and developed by AgriPro Biosciences Inc. This variety is a short semidwarf with good yield performance across the region.

Juvenile growth habit is semi-erect. Plant color is green at boot stage stage with an erect, twisted flag leaf. Auricle hairs are absent and auricle anthocyanin is present. Waxy bloom is present on the stem, flag leaf sheath and head. Head shape is tapering (some strap), middense, awned and white at maturity. Glumes are narrow and midlong with square to elevated shoulder shapes and long acuminate beaks. Seed shapes are elliptical with rounded cheeks and midlong brush hairs. Seed crease width is narrow and depth is shallow.

Laredo is best adapted to the states of Kansas, Nebraska and Colorado. This variety seems especially well adapted to irrigated production.

EXHIBIT E.

STATEMENT OF THE BASIS OF APPLICANTS OWNERSHIP

AgriPro Biosciences Inc. is the applicant for protection in this case being:

a) The incorporated business (registered in Delaware) for and within which regular employees have bred the named variety.

b) The proprietory owner and intending commercial user of the variety.

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EXHIBIT F.

QUALITY AND AGRONOMIC DATA

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AGRIPRO WHEAT
HARD RED WINTER WHEAT

YEAR: 1991

YEAR	VARIETY OR LINE	LOC	FLOUR/WHEAT QUALITY: WHT PROT	FLR PROT	NHRD	FLR YLD	ASH	MIXOGRAM: PK TIME	PK HT	TOL	BAKING QUALITY: ABS	MIX TIME	LOAF VOL	CRUMB: GR	TX	COL	OVER ALL	CMT
	Laredo		14%mb	14%mb R		% R		min	N.U.	mm R	% R	min R	cc R	R	R	R	R	
91	W87-018	NO	13.9	13.0 4	65	72.3 3	.378	2.25	5.5	1030 7	62.0 4	2.25 7	910 6	4	4	4	58	Y
91	W87-018	NO	14.2	13.2 4	65	71.6 3	.406	2.50	5.8	1044 7	62.0 4	2.50 5	950 5	4	4	3	55	
90	W87-018	CI	13.9	12.7 3	86	66.6 4	.559	2.50	5.3	745 7	64.0 3	2.50 5	870 8	4	4	3	56	
90	W87-018	NO	12.8	11.9 4	72	72.7 3	.410	3.00	5.0	1064 6	63.0 2	3.00 3	820 5	3	4	3	47	
90	W87-018	NO	12.0	11.0 7	81	71.8 1	.380	3.00	5.0	1353 5	61.0 5	3.00 3	880 8	4	4	2	57	B
89	W87-018	NO	13.0	11.6 3	66	69.4 2	.365	3.50	5.0	1361 5	61.0 3	3.50 1	870 7	6	5	2	51	
89	W87-018	GI	13.1	11.7 4	63	72.1 1	.445	3.00	5.8	1085 8	62.0 2	3.00 3	900 6	4	2	2	48	B
88	W87-018	SK	14.5	13.8 5	65	64.1 2	.000	3.50	5.0	935 7	62.0 4	3.50 1	1000 5	4	3	3	50	
88	W87-018	NO	13.2	12.6 3	87	66.1 3	.000	3.25	5.2	1143 4	62.0 4	3.25 3	970 6	3	4	3	44	
87	W87-018	GI	13.1	11.7 5	0	69.3 2	.000	3.75	5.2	1235 5	66.0 2	3.00 3	970 7	4	4	3	50	
	AVERAGE		13.4	12.3 4	72	69.6 2	.420	3.03	5.3	1100 6	62.5 3	2.95 3	914 6	4	4	3	52	
91	HAWK	NO	13.2	12.0 6	72	71.9 3	.493	3.50	5.0	1431 5	61.0 5	3.50 1	950 5	3	3	3	48	
91	HAWK	NO	12.9	11.5 6	70	72.7 3	.479	3.50	5.0	1375 5	60.0 6	3.50 1	950 5	2	2	3	45	
90	HAWK	CI	13.5	12.4 4	86	66.2 5	.585	4.25	5.0	1488 2	64.0 3	4.25 1	1000 4	4	3	2	39	
90	HAWK	NO	11.8	10.6 7	66	73.3 2	.469	4.25	4.8	1528 3	61.0 4	4.25 1	800 5	3	5	2	48	
90	HAWK	NO	12.5	11.6 6	95	69.4 3	.496	4.50	4.8	1736 3	62.0 4	4.50 3	920 7	4	3	2	49	
89	HAWK	NO	11.7	10.2 7	68	66.7 4	.461	4.50	4.8	1507 3	59.0 5	4.50 3	900 6	3	4	2	52	
89	HAWK	GI	12.5	11.3 5	75	71.3 1	.457	3.75	5.0	1497 3	60.0 4	3.75 1	850 7	4	3	2	43	
88	HAWK	SK	14.6	13.5 5	69	61.8 3	.000	5.00	4.2	1395 3	61.0 5	5.00 5	1100 4	5	4	3	51	R
88	HAWK	NO	12.5	11.8 5	84	62.7 5	.000	4.25	4.7	1399 2	61.0 5	4.25 1	1020 5	3	3	2	42	R
87	HAWK	GI	12.3	11.0 7	0	67.4 4	.000	4.75	4.5	1495 3	65.0 3	4.00 3	1020 5	3	4	3	49	
	AVERAGE		12.8	11.6 6	76	68.3 3	.491	4.23	4.8	1485 3	61.4 4	4.15 2	951 5	3	3	2	47	

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AGRIPRO HARD RED WINTER WHEAT TRIAL SUMMARY

VAR LINE	YIELD (BU/A) 1988-1991 4 YR. AVG.(39)	T.WT. LB/BU	HD	ANTH	MT	COLEO	HT	STRAW STRNTH	LEAF RUST S	LEAF RUST R	STEM RUST S	STEM RUST R	PM	HF	WSMV	SBMV	SSMV
W87-018	75.0	60.3	5	4	4	5	3	3	2	3	3	4	4	8	6	5	5
VICTORY	71.6	59.5	5	5	3	5	4	4	2	3	7	5	5	9	7	3	2
ABILENE	66.2	60.8	6	7	6	5	3	2	3	7	6	5	8	8	6	3	4

Data generated in 1988:
Berthoud, CO - Yield, Test Wt., Height, Lodging severity (straw strength), Maturity, Pollination, Hessian Fly (greenhouse screening), Powdery Mildew, Leaf Rust, Stem Rust (greenhouse screening)
Nardin, OK - Yield, Test Wt., Height, Maturity, Leaf Rust
Straton, CO - Yield, Test Wt., Lodging Severity
Salina, KS - Yield, Test Wt.
Dumas, TX - Yield, Test Wt., Leaf Rust
Everest, KS - Soil Borne Mosaic Virus
Grant, NE - Yield, Test Wt., Height, Maturity, Leaf Rust

Data generated in 1989:
Berthoud, CO - Yield, Test Wt., Height, Heading Date, Stem Rust (grnhse. & field), Leaf Rust (grnhse)
Nardin, OK - Yield, Test Wt., Height, Maturity, Lodging Severity (straw strength), Leaf Rust (field)
Garden City, KS - Yield, Test Wt.
Geneva, NE - Yield, Test Wt., Height

Data generated in 1990:
Berthoud, CO - Yield, Test Wt., Height, Powdery Mildew, Coleoptile (grnhse), Leaf Rust (grnhse), Stem Rust (grnhse & field)
Nardin, OK - Yield, Test Wt., Maturity, Height, Leaf Rust, Septoria
Wichita, KS - Yield, Powdery Mildew
Salina, KS - Yield, Leaf Rust
Everest, KS - Yield, SSMV
Geneva, NB - Yield, Leaf Rust
Grant, NB - Yield, Test Wt., Lodging severity
Hays, KS - WSMV (visual screening, Dr. T.J. Martin, KSU)

Data generated in 1991:
Berthoud, CO - Yield, Test Wt., Height, Heading, Coleoptile (grnhse), Leaf Rust (field & grnhse), Stem Rust (field & grnhse), Hesssian fly (grnhse)
Nardin, OK - Yield, Test Wt., Heading
Wichita, KS - Yield, Test Wt., Heading, Maturity, Tan Spot
Salina, KS - Yield, Test Wt.
Everest, KS - SSMV
Imperial, NE - Yield, Leaf Rust
Geneva, NE - Leaf Rust
Burlington, CO - Yield, Test Wt.
Garden City, KS - Yield, Test Wt.
Dumas, TX - Yield, Test Wt., Heading, Shatter
Rome, KS - Yield
Hays, KS - WSMV (visual screening, Dr. T.J. Martin, KSU)

*The rankings in the table above are based on a scale of 1-9, where 1 and 9 represent the following extremes for the respective traits.

	1	9
Test Weight	high	low
Heading	early	late
Anthesis	early	late
Maturity	early	late
Coleoptile	long	short
Height	short	tall
Straw Strength	strong	weak
All disease & insect ratings	resistant	susceptible

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